

Optimization the hydrodynamic coefficients of Zarringol Aquifer by Using the mathematical model

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Abstract

Groundwater modeling is a tool for simulating groundwater flow in simple way rather than realfield condition. Mathematical model uses a set of equations for simulating groundwater that shows the hydraulic head and flowpath in and along the model boundaries, indirectly. in this study, GMS 7.1 has been used to determinet the hydrodynamic coefficients of Zarringol Aquifer. Zarringol Plain with an area about 365 km² is located in Golestan province. after providing conceptual model of case study, to determine hydraulic conductivity, model has been calibrated for one month in steady state and afterward to optimize specific yield, calibrated model for 5 years with seasonal stress in un-steady state. The results showed, there is alittle difference between calculated water level by model and observed values. On the other hand, the calibration of the model in steady and unsteady state indicated variation of 12.8 to 178.1 m per day of hydraulic conductivity and 0.07 to 0.09 of specific yield ratio.

Keywords: Zarringol Plain, Modeling, Conceptual Model, GMS.

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